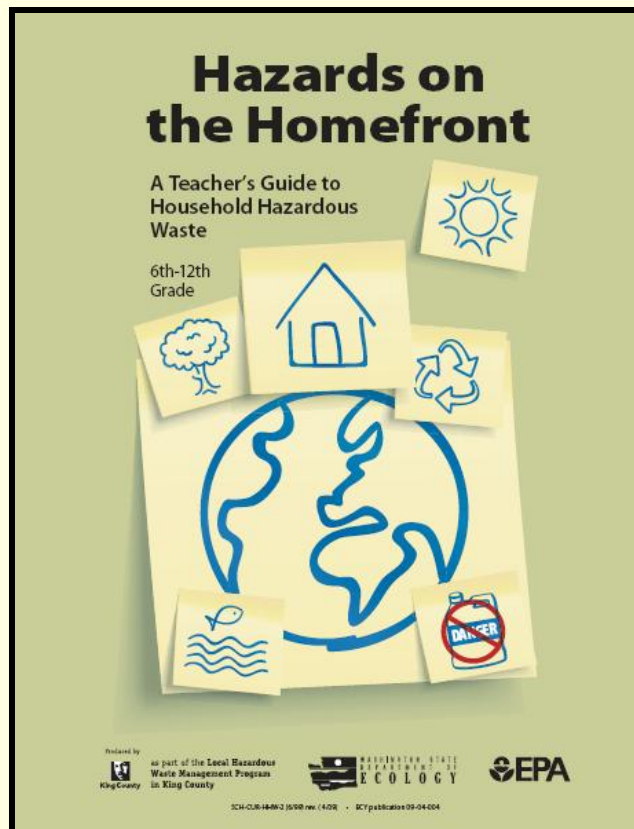


# *Hazards on the Homefront*



Storming the Sound  
Presentation

Oct. 3, 2011

# Project Partners

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## Local Hazardous Waste Management Program in King County

- Donna Miscolta, King County Solid Waste Division
- Jennifer Howell, Triangle Associates
- Erin Hislop, Triangle Associates

## Washington Department of Ecology Hazardous Waste & Toxics Reduction Program

- Joanne Lind

# What We'll Talk About

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- The Hazards on the Homefront Overview
- Lessons from HHF
  - What are Household Hazardous Products?
  - Reading Labels
  - Routes to the Environment
- Other Ecology Resources for Educators

# Household Hazardous Products

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## What's the Big Deal?

The average family has more than 60 hazardous products at home, including

- household cleaners
- automotive products
- paints and solvents
- pesticides.

# What Are Hazardous Products?

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**Review newspaper headlines and discuss**

***What do these titles tell you about these types of products?  
What are some of the problems indicated?***

- Pesticide kills toddler, sickens 4
- Cleansers' appealing labels can be lethal lure for tots: Appetizing looks can result in poisoning
- Illegal dumping of wastes injures rubbish collectors
- Chemical mishap fells 13 at school
- Kirkland garage explodes: Blast rips through house
- Lawn chemical blamed for local stream pollution
- Germ-killing chemical from soaps, toothpaste building up in dolphins



EST 6/17/99

# Kirkland garage explodes

## Blast rips through house

By Patricia Moir  
Journal Reporter

KIRKLAND — A house knocked off its foundation yesterday when vapors exploded in the garage will probably have to be torn down, officials said.

The explosion not only damaged the garage, but blew doors, windows and walls out of the house at 13004 N.E. 94th St. "It puffed out all the walls and dislodged beams," said Battalion Chief Gary Rightenour.

The blast was equal to three or four sticks of dynamite, Rightenour said. Firefighters heard it eight blocks away at the North Rose Hill Fire Station. The explosion occurred just after 7 a.m., when Ernie Long was cleaning the floor of his garage with an acrylic lacquer thinner.

"I turned the washer and dryer on, which was stupid on my part," Long said yesterday.

That apparently sparked the explosion, which was fueled by vapors from the lacquer thinner, Rightenour said. "There's a spark whenever you turn on a switch."

Long, 61, escaped without serious injury. "He's extremely lucky," Rightenour said.

Neighbors said Long is a retired mechanic whose hobby is restoring classic cars. That could explain why he had the lacquer thinner, a flammable liquid that can produce explosive fumes without adequate ventilation.

Long's '39 Chevy was damaged and his home of 33 years was declared uninhabitable by city officials.

George Dance, who lives across the street, said Long hasn't decided whether he will rebuild. Neighbors have set up a fund to help him with expenses. Donations may be made to any branch of Key Bank.

## 50 homes evacuated as toxic fumes spew from house fire

OLYMPIA — Fumes from toxic chemicals spewed into the air from a house fire yesterday, causing the evacuation of about 50 homes in northeast Thurston County.

No one was reported injured or overcome by the fumes, Thurston County sheriff's Sgt. Robert West said. The chemicals, including insecticides and rat poison, were stored in the home's garage.

"Several canisters of the calcium (calcium cyanide) exploded, and the cloud went high into the air," West said.

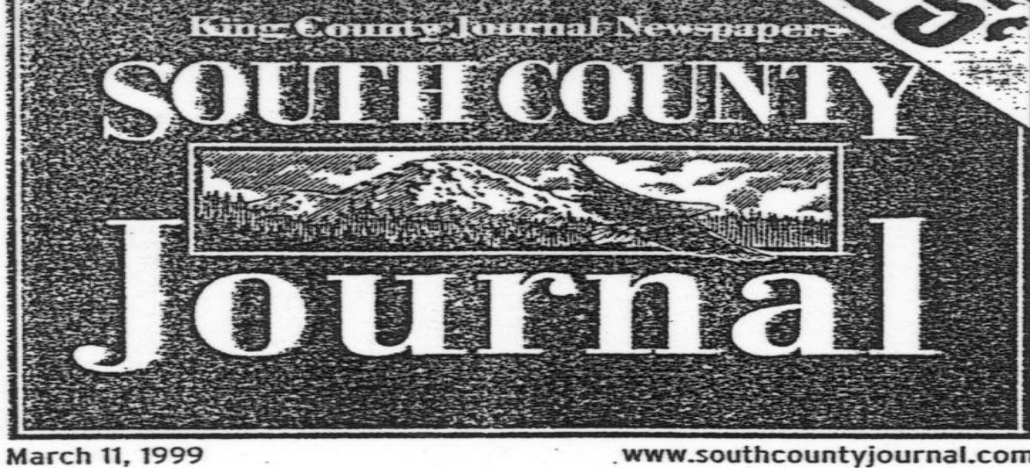
The evacuated homes are in a sparsely populated area about three miles from Olympia, said Dave Frinell, coordinator for

emergency services for the county. Dr. Gary Goldbaum, Thurston County health officer, said officials believe the chemicals belong to an exterminator. The homeowner was not immediately known.

The chemicals included calcium cyanide; tetra chloroethylene, a dry-cleaning solvent; naphthalene sodium fluoroacetate, a rat poison; and insecticides phlor-dane, dursban, ficam and paylan, Goldbaum said.

Firefighters decided to let the fire burn the home and chemicals because it "might do more harm" to try to extinguish the blaze, Frinell said. Firefighters might have been injured by the chemicals if they continued to fight the fire.





# Lawn chemical blamed for local stream pollution

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Journal staff

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Soos Creek east of Kent and Miller Creek in Des Moines are among nine King County streams polluted by homeowners using pesticides on their lawns, county officials said yesterday.

Scientists found that nine of the 10 neighborhood streams sampled last spring had concentrations of diazinon that exceeded levels set to protect fish, including the threatened chinook salmon, according to a news

release from the county's Department of Natural Resources.

Officials with the county's Hazardous Waste Management Program suspect the dangerous levels of the pesticide were caused by homeowners treating their lawns each spring for crane flies by using commercial products that include diazinon.

More findings from the sampling project conducted by the U.S. Geological Survey will be released today at a press conference at Lyons Creek in Lake Forest Park.



# Germ-killing chemical from soaps, toothpaste building up in dolphins

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By Brett Israel

Environmental Health News

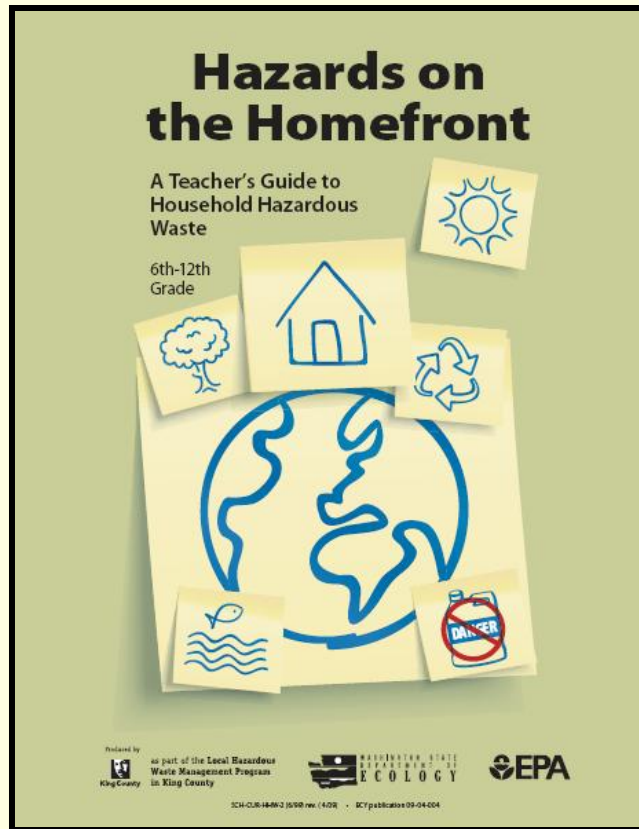
August 11, 2009

**Triclosan** is the **germ-killing chemical** of choice in hundreds of products, including **liquid hand soaps**, toothpaste and deodorants. Now some scientists are calling for its removal from consumer products because it is building up in the ocean's food web.

# The Hazards on the Homefront Guides

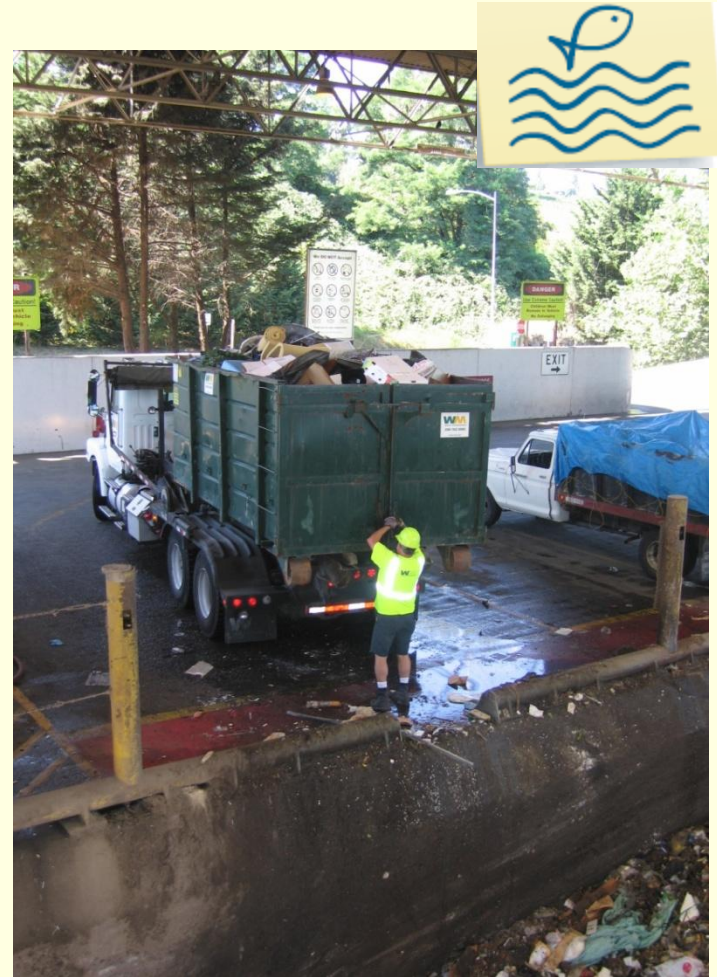
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A look at  
the guide and  
lesson format



# Hazards on the Homefront Goals

- Reduce the amount of hazardous waste
  - in the landfill.
  - at the wastewater treatment plant.
  - in stormwater and in our local streams, rivers, lakes, and Puget Sound.
- Encourage the use of safer substitutes.
- Properly dispose of what is used.



# Hazards on the Homefront

## Teacher's Guide

Seven to nine lessons that

- engage students and have a real impact on their lives.
- are ready-to-use and easy to incorporate into existing curriculum.
- integrate Washington State's EALRs and GLEs, and are approved as supplemental material by OSPI.
- reference local and web-based resources.

### GOAL

Avoid buying products that contain hazardous ingredients. Or choose the least hazardous product.

### Learning Objectives

Students will

- understand the term *hazardous waste*.
- discover how hazardous products affect the human body and the environment.

### Summary of Lesson

Students will be introduced to the concept of hazardous waste and learn about the effects of hazardous products by reading and analyzing articles. The class will develop a common definition of hazardous waste.

### Grade Levels 6-12

#### Multiple Intelligences

Interpersonal, intrapersonal, logical/mathematical, verbal/linguistic

#### Duration

Two 40- to 50-minute investigations

#### Vocabulary

Household hazardous products, household hazardous waste

#### Materials

- Student handouts
  - News articles gathered from newspapers or the Internet
  - Hazardous Waste Articles Matrix
  - Writing Score Sheet
  - Checklist for My Writing
- Slides
  - Hazardous Waste Headlines (create from collected news articles)
  - 1.1 Hazardous Waste Headlines: Article-Guiding Questions

#### Resources

Visit [www.environmentalhealthnews.org](http://www.environmentalhealthnews.org) or search your local print or online newspaper.

#### Washington State EALRs

- Reading
- Writing

See Appendix G for matrix of EALRs and GLEs.



# Hazards on the Homefront

## Teacher's Guide

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- Flexible
- Adaptable to multiple learning styles and English Language Learners
- Engaging and authentic; relevant to students' lives; can stand alone or be taught as a unit

# Hazards on the Homefront

## Teacher's Guide

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- Background information in each lesson
- Resource list
- Glossary
- Product labeling requirements
- Sample labels and other teaching tools
- EALRs and GLEs

# Toxic/Poisonous

- Capable of causing injury or death through swallowing, breathing, or skin absorption.



# Flammable/Combustible

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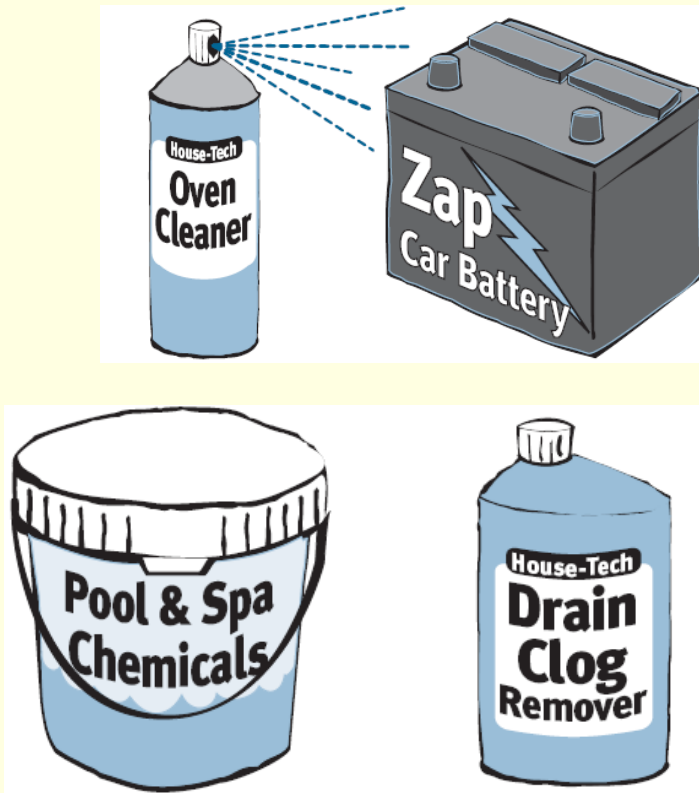
- Can catch fire at relatively low temperatures.





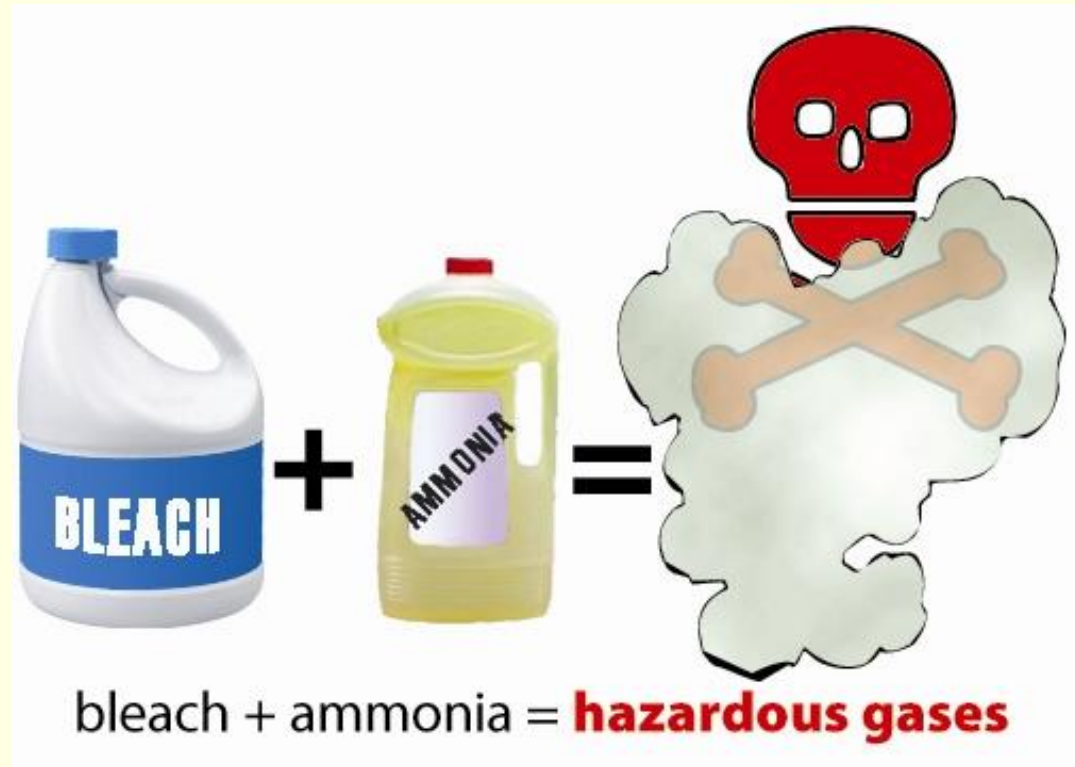
# Corrosive

- Can eat away materials and burn living tissue by chemical action.



# Reactive

Can react with air, water or other substances and result in fire, explosions or the generation of toxic gases.



# Label reading game

## Object of the game

To correctly identify the name, signal words and principal hazards on the product label taped on your back.



## How to play

- Circulate through the room and find clues about your product label by asking *yes* or *no* questions of your colleagues.
- You must ask questions of at least three different people and you are allowed to ask only two questions of each person.
- When you figure out your product you can return to your seat.
- \*Bonus: Can you identify a safer alternative to your product?

# Household Product Labels Data Sheet

Name \_\_\_\_\_

Name of household product	Signal words	Principal hazards	Precautionary statements	First aid information	Questions
Seventh - Generation Dishwashing Liquid	CAUTION		Keep out of reach of children.	In case of eye contact, flush with water for at least 15 minutes.	What happens if someone drinks it?





# HOUSEHOLD HAZARD WORDS

## TOXIC/POISONOUS

Corrosive chemicals will probably be marked as danger or warning

Toxic/Poisonous gas →

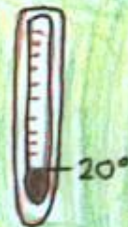


Toxin/Poison can enter your body through Swallowing, breathing or skin absorption

Corrosion can burn through living tissue by chemical action



Combustion can happen at relatively low temperatures so be careful!



Do you smell something burning?

Different substances can react with air, water or other substances

Reactions can result in fire, explosions or creation of toxic or poisonous gases

## FLAMMABLE/COMBUSTIBLE



Poisonous Products:  
• Nail Polish



• Rat Poison  
• Brake Fluid

**TOXIC/POISONOUS**

Corrosive products:  
• Oven Cleaner



• Car Battery  
• Pool chemicals

**CORROSIVE**

Flammable Products:  
• Paint and Paint Thinner



• Rubbing  
• Hair Tonic

**FLAMMABLE**



Reactive  
• Bleach  
• Chlorox  
• Dishwasher  
• Detergent

**REACTIVE**

# Safer Alternatives

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- Version 1: Lesson 5b Testing Safer Cleaning Products
  - Student design an experiment to test a product of their choice against a safer substitute.
- Version 2: Lesson 6b Pest Detectives
  - Teaches about Integrated Pest Management





## Hazards on the Homefront

[Home](#)[King County Resources & Teacher Workshops](#)[Kitsap County Resources](#)[Lewis County Resources](#)[Yakima County Resources](#)

Contact:  
Mariann Cook-Andrews  
360-407-6740  
[maco461@ecy.wa.gov](mailto:maco461@ecy.wa.gov)

**New Statewide  
Teacher's Guide  
is here!**

### Teacher's Guide (New statewide edition!)

- Designed for grades 6 through 12
- Teaches about human health and our air, land and water
- Teaches problem-solving skills
- Helps teachers apply [Multiple Intelligences](#) and meet the [EALRs](#)
- Provides real world examples about hazardous products
- Provides flexible lessons regarding variety and length
- Contains Web links and other resources for extended learning and self-directed projects



Get a **FREE**  
copy of the  
guide

#### Why use this guide?

The public's concern about hazardous products is growing. We know more and more every day about the chemicals and ingredients used in products, and the health and environmental hazards they pose especially to children.

This Guide integrates state and local information relevant to everyday activities at school and home, and in your students' community.

#### Theory of Multiple Intelligences

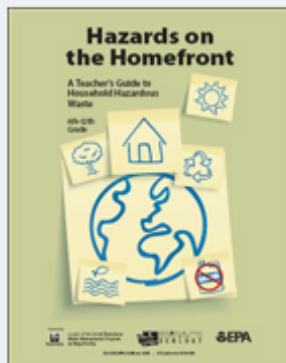
Each lesson in the guide notes the relevant intelligences from Howard Gardner's Theory of Multiple Intelligences. Teachers can use this information to assist them in accommodating the various needs and talents of their students.

#### Washington's Essential Academic Learning Requirements (EALRs)

This teacher's guide is an integrated set of lessons based on the EALRs. The lessons address standards in the areas of reading, writing, communication, math and science. [Learn more.](#)

#### Acknowledgements

Thank you to our partners! The Local Hazardous Waste Management Program in King County created the original Hazards on the Homefront Teacher's Guide and provided resources for the production and distribution of this statewide version. Triangle Associates, Inc. has provided valuable consultant services for the statewide version and the teacher workshops. This project is generously funded by the U.S. Environmental Protection Agency under assistance agreement NE96083101-0 to the Washington State Department of Ecology. Although the information in the Teacher's Guide and Workshops has been funded wholly or in part by EPA, it may not necessarily reflect the views of the Agency and no official endorsement should be inferred.







## Ecology for Educators & Students

*Working with you  
for a better Washington*



### ECOLOGY FOR EDUCATORS & STUDENTS

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[Students](#)

[Community Leaders /  
Adults](#)

[What you can do](#)

[Resources, Research  
& References](#)

[Grants](#)

[Databases](#)

[Publications](#)

### Ecology for Educators and Students

We all make choices that affect the environment we depend upon, and cumulatively they add up to big effects. Ecology provides environmental education materials for classroom teachers and students' research, community educators' programs and for individuals choosing to make a difference. Learn what you can do...and have fun!

- **[Classroom Educators](#)** - Ecology provides science-based, interdisciplinary environmental education curricula and award-winning materials. These quality environmental education resources teach problem solving and critical thinking for students. Ecology also offers accessible [databases](#) and [research](#) links.

Interdisciplinary curricula include Cool School Challenge, Hazards on the Homefront, A-Way with Waste, Discover Wetlands, The Estuary Guide, Project WET, and Healthy Water, Healthy People (water quality monitoring).

**[Teacher Workshops: Dates and Locations](#)** - A calendar of workshops, conferences, and other events oriented toward environmental educators.

- **[Students](#)** - Check out the student pages for everything from fun facts and learning, to real science research, maps and resources, and even jobs for youth and green jobs training to help you and the environment.
- **[Community Leaders / Adults](#)** - Ecology provides materials to assist non-formal educators and local government programs. Many of these can be customized to include local

### **[ENVIRONMENT WASHINGTON](#)**

#### **[Tools for Teachers](#)**

Look up environmental education activities aligned to GLEs

### **[STORMING THE SOUND CONFERENCES](#)**

### **[SHRINK YOUR CARBON FOOTPRINT](#)**

Make a pledge to help slow climate change

### **[WASHINGTON WATERS - OURS TO PROTECT](#)**

Clean water campaign to help people change behaviors that pollute





## Toxic Free Tips

Hazardous Substance Information &amp; Education Office

1-866-939-9991



Resources for a safer  
and healthier home,  
school, workplace, and  
community



**Toxic Free Tips is an information resource for households, schools, and workers. Toxic Free Tips and the Washington Department of Ecology do not endorse any product, business, or political cause. Our goal is to provide you with current, high-quality information so that you can stay informed and make safer choices about toxics in everyday products.**



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**CURRENT TOPICS**

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### [TOXIC CHEMICALS AND HAZARDS](#)

A-Z list of toxic hazards, plus links to possible health effects.



### [SHOPPER'S GUIDE](#)

Information about products and safer alternatives.



### [RECYCLING AND SAFE WASTE DISPOSAL](#)

Where and what you can recycle. Also, contacts for your local household hazardous waste program.



### [SAFER SCHOOLS AND CHILDREN](#)

Protect kids from toxics where they live, learn, and play. Fun learning activities for children.